

Target 100

Reporting Category Computation and Estimation

Topic Adding two-digit numbers with sums of 99 or less

Materials

- Dot or number cubes
- Base-10 blocks (10 rods and 20 cubes per student)

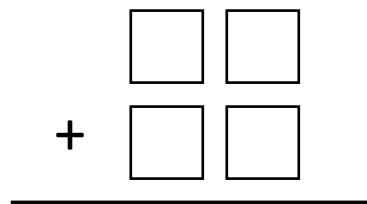
Vocabulary

add, addend, sum, estimate

Student/Teacher Actions (what students and teachers should be doing to facilitate learning)

Note: Before using this activity, reinforce students' understanding of regrouping between tens and ones in addition, using base-10 blocks.

1. Give each student a blank piece of paper folded into fourths. In each fourth, have students draw a game board, as shown below, and label their four game boards A–D.



2. Group students into pairs, and have partners take turns rolling a dot or number cube four times. With each roll, the player writes the number that comes up somewhere in his/her "A" game board in either the tens place or the ones place. Once a number has been written, it cannot be changed. The player also takes the corresponding number of base-10 blocks (e.g., first player rolls a 4, writes 4 in a tens place, and takes four tens rods; second player rolls a 2, writes 2 in a ones place, and takes two ones cubes). After rolling and writing all four digits, each player adds their two numbers to find the sum. The goal is to have the sum that is closest to 100 without going over.
3. Have students play three more rounds of the game.
4. Review and summarize with the class what students did and learned in the activity. Have students share some of the problems they wrote and tell how they found and recorded the sums.

Assessment

- **Questions**
 - How can estimating the sum before solving an addition problem be helpful?
 - When playing the game, how did you decide where to place each number rolled? Did you use a specific strategy? If so, what was it?
- **Journal/Writing Prompts**
 - Megan is playing “Target 100.” She rolls the following numbers: 6, 4, 2, 3. Explain how she can get a sum that is as close to 100 as possible without going over. What two two-digit numbers should she create? What will be her sum?
 - Lorenzo is playing “Target 100.” He rolls the following numbers: 5, 3, 4, 7. Explain how he can get a sum that is as close to 100 as possible without going over. What two two-digit numbers should he create? What will be his sum?
- **Other**
 - Circulate as students are creating and recording their own problems, and observe the strategies and rationales they use. Ask questions to determine whether they are absorbing the key points noted above. Note who is having difficulty, and give help, as needed. Collect the papers as an assessment.
 - Have students create a “One-Minute Paper,” answering the following questions on paper in one minute: “What was the most important thing you learned? What important question remains unanswered?” Be sure to clear up any remaining questions students may have.

Extensions and Connections (for all students)

- Have each student write an addition word problem and exchange it with a partner. Allow students to use base-10 blocks or other manipulatives to solve the problems. Encourage students to use strategies for adding, such as hundred charts, numbers lines, or other invented strategies.
- Have students explore the relationship between subtraction and addition with two-digit numbers.

Strategies for Differentiation

- Allow students to use calculators to check their solutions for each addition problem created.
- Have students use place value mats to keep tens and ones organized.
- Allow students who find regrouping with base-10 blocks difficult to use connecting cubes instead to help them see the grouping and regrouping process.
- Allow students to use grid paper to help them line up vertical columns.